

HIGH IMPEDANCE ANTIFUSE

Abstract of the Disclosure

A programmable element that has a first diode having an electrode and a first insulator disposed between the substrate and said electrode of said first device, said first insulator having a first value of a given characteristic, and an FET having an electrode and a second insulator disposed between the substrate and said electrode of said second device, said second insulator having a second value of said given characteristic that is different from said first value. The electrodes of the diode and the FET are coupled to one another, and a source of programming energy is coupled to the diode to cause it to permanently decrease in resistivity when programmed. The programmed state of the diode is indicated by a current in the FET, which is read by a sense latch. Thus a small resistance change in the diode translates to a large signal gain/change in the latch. This allows the diode to be programmed at lower voltages.